

entering the body portion of the case, effectively solid to the extent as to define a barrier against the passage of gun powder into or therepast when disposed within the case with its circumference in frictional engagement with the inner wall of the case, at a location with the case inwardly of the location of the transition of the necked-down end of the case and the body portion of the case, having first and second opposite and generally parallel faces when in its relaxed state, being of a circumference essentially equal to the inner circumference of the body portion of the case at the location of the level of the quantity of gun powder in said case, said disc being self-supporting and overlaid upon the top surface of the powder between the quantity of powder and the proximal face of the proximal end of the projectile.

REMARKS

Applicant notes the Examiner references Claims 1-24 as being filed in the original application. The original application contained only 23 Claims. The restriction requirement includes Claims 15-23 in Class II, however, and paragraph 3 of the Examiner's communication notes that Claims 15-23 are withdrawn from further consideration by the Examiner.

Applicant confirms the telephonic selection of Claims 1-14 (comprising Class I as defined by the Examiner) for prosecution in the present application, reserving the right to file Claims 15-23 in a subsequently filed application.

Claim 3 has been deleted, without prejudice.

Claims 1-2 and 4-14 remain in the application, with new Claims 24 and 25 being added per the present response. No Claim stands allowed.

A "marked up" version of the amended Claims is attached hereto, showing the changes made in the amended Claims.

The Examiner has objected to the drawings. First, in response, Applicant requests that the Examiner approve the insertion of the numerals A51" and A55" in Figure 1 as indicated in red on the enclosed copy of the initially filed single sheet of drawings. A fresh sheet of drawings

including Figures 1-7 (with the requested amendment to Figure 1) is submitted herewith also. Entry of the fresh sheet of drawings containing Figures 1-7 is respectfully requested.

A new sheet of drawings containing new Figures 8 and 9 is enclosed. Approval of entry of this sheet of drawings is respectfully requested. Support for Figure 8 is found in the specification at page 10, line 21 through page 11, line 2 and page 14, lines 11-15. Support for Figure 9 is found in the specification at page 15, line 14 through page 16, line 4 and partly by Figure 2 and at original Claim 11.

Withdrawal of the objections to the drawings is respectfully requested in view of the changes requested.

Claims 10-13, as originally submitted, stand rejected under 35 USC '112. As to Claim 10, the term fast burning has been amended to read slow burning thereby bringing the language of this Claim into conformity with the specification. As to Claim 11, attention is directed to new Figure 9. It is suggested that the language of Claim 11 is consistent with the description at page 15 of the specification.

Withdrawal of this basis for rejection of Claims 10-13 is respectfully requested.

Claims 1-14 stand rejected under 35 USC '112, second paragraph, as being indefinite. With respect to Claim 1, this Claim has been rewritten to reference **a pistol and rifle** in the preamble.

Withdrawal of this basis for rejection of Claims 1-14 is respectfully requested.

Claims 7 and 8 stand rejected under 35 USC 112, second paragraph, as being indefinite. With respect to Claim 7, the term, "further" has been deleted, thereby providing antecedent basis for said disc. In view of the amendment to Claim 7, Claim 8, which is dependent from Claim 7, now is also definite.

Withdrawal of this basis for rejection of Claims 7 and 8 is respectfully requested.

Claim 10 stands rejected under 35 USC '112, first paragraph, in that Claim 10, as originally filed recites a fast burning powder. Claim 10, as amended, is dependent on Claim 1 and calls for a slow burning powder as called for in Applicant's specification, as noted by the Examiner.

Claims 1,3 and 10 stand rejected under 35 USC 102(b) as being anticipated by Stiefel et al.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention arranged as in the claim. *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick* 221 USPQ 481, 485, (Fed. Cir. 1984)

As amended, Claim 1 recites:

“an elongated projectile terminating inside the body portion of the case with its face disposed proximate the body portion of the case with its proximal face disposed proximate a quantity of gun powder disposed within the case and defining a generally annular void volume with the body portion of the case and surrounding that portion of the projectile which projects into the body portion of the case.”

Stiefel et al. disclose a round of gun ammunition in which the projectile incompletely fills the necked-down portion of the case and a quantity of loosely associated cotton fibers packed fully within only that portion of the necked-down portion of the case which is not occupied by the projectile. In combination, the projectile and the cotton fibers fill the necked-down portion of the case. In Stiefel et al., the projectile does not protrude into the body portion of the case, hence there is no annular void space defined within the body portion of the case between the projectile and the inner wall of the body portion of the case. Functionally, in Stiefel et al., the cotton functions to fill any air space remaining between projectile 12 and the propellant. There

is no disclosure found in Stiefel et al. that the cotton may be useful unless it completely fills any air space remaining between the projectile 12 and the propellant. Thus, the disclosure of Stiefel et al. is to fill any (meaning all) air space existing in a cartridge case between a projectile and the gun powder in the case.

Applicant's amended Claim 1 further calls for:

A disc formed of readily flammable, resiliently flexible, effectively solid, material, having first and second opposite and generally parallel faces and when in its relaxed state being of a circumference essentially equal to the inner circumference of the body portion of the case at the location of the level of the quantity of gun powder, said disc being self-supporting and overlying the top surface of the powder between the quantity of powder and the face of the proximal end of the projectile within the case, with its circumference in frictional engagement with the inner wall of the case, thereby defining a barrier against the flow of said gun powder into or past said disc into said annular void volume of the case and maintaining the gun powder positionally stable within the case with few or no material void spaces within the volume of the gun powder.

Stiefel et al. do not disclose a disc is a thin flat, circular thing of any material. A ball of cotton fibers can be a disc only if the fibers are compacted into, and remain in, a thin flat, circular thing. Stiefel et al. cotton does not qualify as a disc. Moreover, in the Stiefel et al. round of ammunition, the grains of the powder are free to work their way into and even through, the interstices between the cotton fibers, thereby resulting in the ball of cotton failing to function as a barrier which maintains the gun powder positionally within the case. The cotton of Stiefel et al. therefore fails to maintain few or no material void spaces with the volume of the gun powder.

Thus, Stiefel et al. fail to disclose a portion of the projectile projecting into the body portion of the case, fail to disclose an annular void within the body portion of the case, and fail to define a disc as the term is defined in Claim 1, among other elements.

Claim 3 has been deleted by the present amendment. Claim 10 is dependent from Claim 1 and its allowance is urged for the same reasons, among others, as set forth hereinabove in discussing its parent Claim 1. For example, per the Examiner's observation, Stiefel et al. disclose a combination of fast and slow burning powder, not just a slow burning powder.

In view of the failure of Stiefel et al. to disclose each and every element of the claimed invention arranged as in the claim, withdrawal of the rejection of Claims 1 and 10 under 35 USC '102(b) as being anticipated by Stiefel et al. is respectfully requested.

The Examiner's attention is invited to Applicant's disclosure that the first disc is of a paper-like (postcard like) material which by definition is essentially solid and capable of forming a barrier within the case which is impenetrable by the gun powder. Attached hereto is an excerpt from the U.S. Postal Service regulations regarding postcards in which it is noted that postcards must be about 75 pounds basis weight paper.

Claims 2,4, 7-9 and 14 stand rejected under 35 USC 103(a) as being unpatentable over Stiefel et al. as applied to Claims 1 and 3 and further in view of Arter.

Claim 2 is dependent on Claim 1 and adds to the invention of Claim 1 a further disc of a fibrous material. As recognized by the Examiner, Stiefel et al. neither teach nor disclose dual discs for maintaining the position of the gun powder within the case. Per the Examiner, Arter discloses multiple discs. However, the two discs of Arter are different in form and function from the discs claimed by Applicant. Specifically, both the discs of Arter are identified as wadding. Wadding is a term of art and identifies material placed between the gun powder and the projectile. It is used in shotgun shells and muzzleloader-type firearms to distribute the force on the projectile when the powder is ignited. In today's art, the wadding and shot cup usually are formed into single unit and commonly are formed of a plastic material. In Arter, the gun powder is held positionally stable within the case by a conical member. The wadding is positioned between this conical member and the **shot of the shotshell** (see Figure 2). No such wadding is found in the either the pistol or rifle cartridge (Figure 1 of Arter) nor in the heavier type of cartridge depicted in Figures 3 and 4 of Arter. Thus, there is no suggestion, motivation, nor

teaching in either Stiefel et al. or Arter that dual discs should be employed in a round of pistol or rifle ammunition in which the projectile thereof protrudes from the necked-down portion of the case into the body portion of the case, with all the resulting features set forth in Claim 1. In particular, there is no disclosure, teaching, or suggestion that a first disc of an effectively-solid material should be backed up with a further disc of a fibrous material such as a quantity of cotton fibers.

The Examiner notes that the gun powder of Stiefel et al. incompletely filling the body portion of the case. This observation is contrary to the disclosure of Stiefel et al. wherein the gun powder **fully** fills the **body portion** of the case, the body portion of the case being that portion of the case intermediate the necked-down portion of the case and the trailing end (containing the primer) of the case. In view of this teaching of Stiefel et al., there is an absence of any motivation, suggestion or teaching in Stiefel et al. for a person skilled in the art to look to Stiefel et al. when designing a round of ammunition in which the proximal end of the projection necessarily protrudes into the body portion of the case, thereby defining an annular void space between such protruding portion of the projection and the inner wall of the body portion of the case. In this same vein, Arter neither discloses, teaches nor suggests a case having a necked-down portion and a body portion. The cases of Arter are of right cylindrical geometry.

Withdrawal of the rejection of Claim 2 under 35 USC '103(a) is respectfully requested.

Claim 4 is dependent on Claim 1 and is directed to a paper stock disc in the combination of Claim 1. No such disc is disclosed, taught nor suggested in either of Stiefel et al. or Arter.

Claim 7 is dependent on Claim 1 and is directed to a disc formed from natural non-woven fibers. As noted, the cotton stuffing of Stiefel et al. does not qualify as a disc.

Claim 8 is dependent on Claim 7 and adds the feature of a disc having specified weight.

Claim 9 is dependent on Claim 2 and adds the feature of relative disposition of the disc and further disc within the case.

Claim 10. is dependent on Claim 1 and, as amended, calls for the gun powder to be a slow burning powder. The powder of Stiefel et al. is a combination of slow and fast burning portions of gun powder, all combined into an individualized pellet of gun powder. Arter does not characterize his gun powder.

For the foregoing reasons, among others, and the reasons discussed hereinabove in connection with Claim 1 and 2, withdrawal of the rejection of Claims 2,4, 7 and 10 under 35 USC 103(a) is respectfully requested.

Claims 5 and 6 stand rejected under 35 USC '103 (a) as being unpatentable over Steiler et al. and Arter as applied to Claims 1-4, and further in view of Gardner (931). Claim 5 is dependent from Claim 1 and Claim 6 is dependent from Claim 5 so that Claims 5 and 6 inherit the language of their respective parent claims.

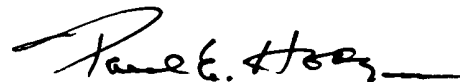
Referring to the discussion hereinabove relative to Claim 1 and the applicability of Steiler et al., and Arter, it is respectfully suggested that Claim 1, being allowable, carries with it the dependent (directly and indirectly) Claims 5 and 6.

Although the Examiner notes that Gardner teaches the disposing of a wad (disc)... between the projectile and gun powder, it is noted that the projectile of Gardner does not protrude into the body portion of the case, hence does not define an annular void space between the proximal end of the projectile and the inner wall of the case. Further, as noted with respect to Steiler et al. and Arter, Gardner neither teaches, discloses nor suggests the combination of features recited in Claim 1 and which carry forward into Claims 5 and 6.

Withdrawal of the rejection of Claims 5 and 6 under 35 USC 103(a) is respectfully requested.

Reconsideration of the application and allowance of Claims 1,2,4-14 and new Claims 24 and 25 are respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Paul E. Hodges", with a long horizontal flourish extending to the right.

Paul E. Hodges

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PATENT
ATTORNEY DOCKET NO.: 26006.00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: BEAL, HAROLD

FOR: Round of Rifle Ammunition and Method for Making Same

SERIAL No.: 09/755,703

FILED: 1/5/01

EXAMINER: THOMSON, M.

ATTACHMENT TO RESPONSE TO EXAMINER'S COMMUNICATION

MAILED JULY 5, 2001

CONTAINING MARKED-UP

VERSION OF AMENDED CLAIMS

Claim 1. (amended) A round of [gun] pistol or rifle ammunition including a projectile adapted to be propelled from [the gun] a pistol or rifle along a trajectory to a target at a subsonic velocity including [(an elongated generally cup-shaped case having a body portion, a partially closed trailing end which houses a primer, [and] a necked-down portion adjacent an open leading end thereof and an inner wall, comprising

[(b) a quantity of gun powder disposed within and incompletely filling said body portion of said case,]

[(c)] an elongated projectile having distal and proximal opposite ends , residing in the necked down portion of [said]the case with said distal end thereof projecting outside [said] the leading end of [said] the case and with said proximal end therefor extending inwardly of and terminating within the body portion of [said] the case, and with said proximal end of said projectile including a generally planar proximal face disposed substantially perpendicular to the length of said

elongated projectile, said proximal end of said projectile terminating inside [said] the body portion of said case with its proximal face disposed proximate [said] a quantity of gun powder disposed within the case and defining a generally annular void volume within the body portion of the case and surrounding that portion of said projectile which projects into the body portion of the case,
a quantity of gun powder disposed within and filling the body portion of the case to a top level adjacent said proximal face of said proximal end of said projectile,

- [(d)] a disc formed of readily flammable material, resiliently flexible, effectively solid, material, having first and second opposite and generally parallel faces and when in its relaxed state being of a circumference essentially equal to the inner circumference of [said] the body portion of [said] the case at the location of the level of said quantity of gun powder, said disc being self-supporting and overlying said top level of said powder and disposed between said quantity of powder and said proximal face of said proximal end of said projectile [disposed] within [said] the case with its circumference in frictional engagement with the inner wall of the case [between said quantity of powder and said face of said proximal end of said projectile, said disc] thereby defining a barrier against the [flow] passage of said gun powder past said disc into said annular void volume of the case and maintaining the gun powder positionally stable within the case.

Claim 2. (amended) The round of [gun] ammunition of Claim 1 and including a further disc [,] having distal and proximal opposite faces, disposed within [said] the body portion of [said'] the case and between said disc and said adjacent face of said proximal end of said projectile, said further disc being of a fibrous material having a plurality of tortuous passageways defined through the thickness thereof which serve to filter and capture within said disc individual particles of gun powder , thereby

defining a further barrier against the passage of said gun powder into said annular void volume within the case. [which may escape past the barrier defined by said disc].

Claim 4. (amended) The round of [gun] ammunition of Claim 1 wherein said disc comprises paper stock having a basis weight of about 75 pounds.

Claim 5. (amended) The round of [gun] ammunition of Claim [1]4 wherein said disc is of a first thickness centrally thereof and of a second and lesser thickness in the circumferential margin thereof.

Claim 6. (amended) The round of [gun] ammunition of Claim 5 wherein said first thickness centrally of said disc is about 0.14 inch and said second and lesser thickness in the circumferential margin thereof is about 0.10 inch thick.

Claim 7. (amended) The round of [gun] ammunition of Claim [3] 1 wherein said further disc comprises natural [non-woven] fibers.

Claim 8. (amended) The round of [gun] ammunition of Claim 7 wherein the weight of said disc is between about 0.10 and about 0.16 grains.

Claim 9. (amended) The round of [gun] ammunition of Claim 2 wherein said distal face of said further disc is disposed contiguous said disc and said proximal face of said further disc is proximate said proximal face of said proximal end of said projectile disposed within [said] the body portion of [said] the case.

Claim 10. (amended) The round of [gun] ammunition of Claim 1 wherein said gun powder is [fast] slow burning.

Claim 11. (amended) The round of [gun] ammunition of Claim 1 wherein said projectile includes a body portion intermediate its distal and proximal ends, said distal end of said projectile defines an ogive, and said projectile is tapered from a first

and minimum diameter at its proximal end to a second and greater diameter adjacent the transition of [said] the body portion of said projectile to said ogive of said projectile.

Claim 12. (amended) The round of [gun] ammunition of Claim 11 wherein the difference between said first and second diameters of said tapered projectile is about 0.00030 inch.

Claim 13. (amended) The round of [gun] ammunition of Claim 12 wherein said round is suitable for firing from a gun of 5.56 mm [caliber].

Claim 14. (amended) The round of [gun] ammunition of Claim 1 and including a separator having a diameter substantially less than the internal diameter of the case proximate the location of said disc and interposed between said disc and said proximal face of said proximal end of said projectile.

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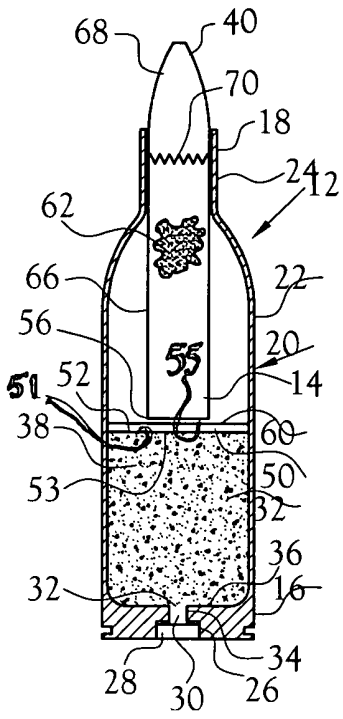


Fig.1

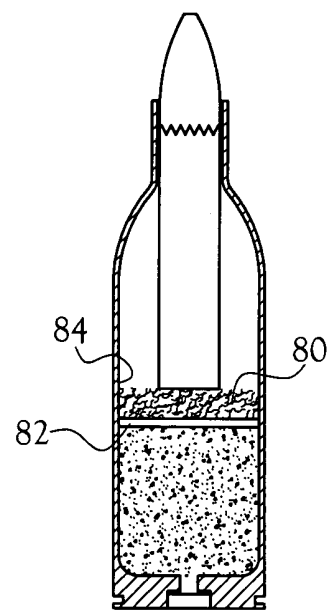


Fig.2

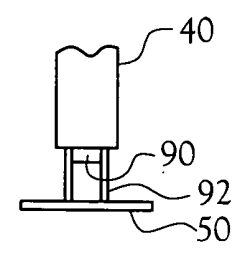


Fig.4

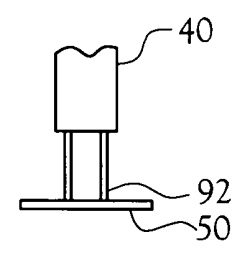


Fig.5

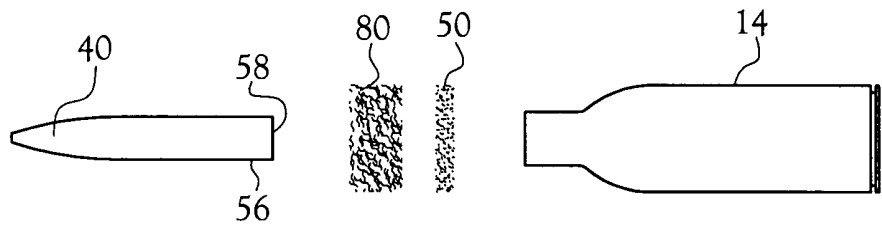


Fig.3

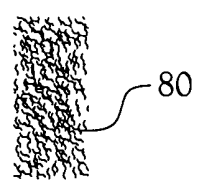


Fig.6

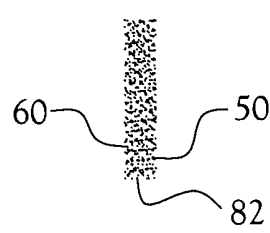


Fig.7